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ABSTRACT

This paper describes the research and evaluation efforts of the Navy Substance Abuse Prevention Program at the University of Arizona. The importance and usefulness of formative and summative evaluations are discussed and specific evaluation tasks are identified. The first of these tasks is associated with personnel selection; the functions and qualifications of various personnel (site screeners, facilitators, site coordinators, trainers, and students) are reviewed. The second task considered is personnel training. The training of screeners, facilitators, and site coordinators, and observation training are discussed. The third task described involves the intervention process. Viable sources of program mediation are discussed including facilitator characteristics, curriculum, classroom environment, and participant characteristics. The final evaluation task discussed is participant change. The primary goal of the program intervention is defined as change in drug and alcohol related behavior in the target population. The components described in this section focus on establishing the extent to which participants' knowledge, attitudes, and behaviors are altered as a direct result of participation in the program. Five summative studies currently in progress are briefly outlined. (NRB)

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NAVY SUBSTANCE ABUSE PREVENTION PROGRAM:

RESEARCH AND EVALUATION

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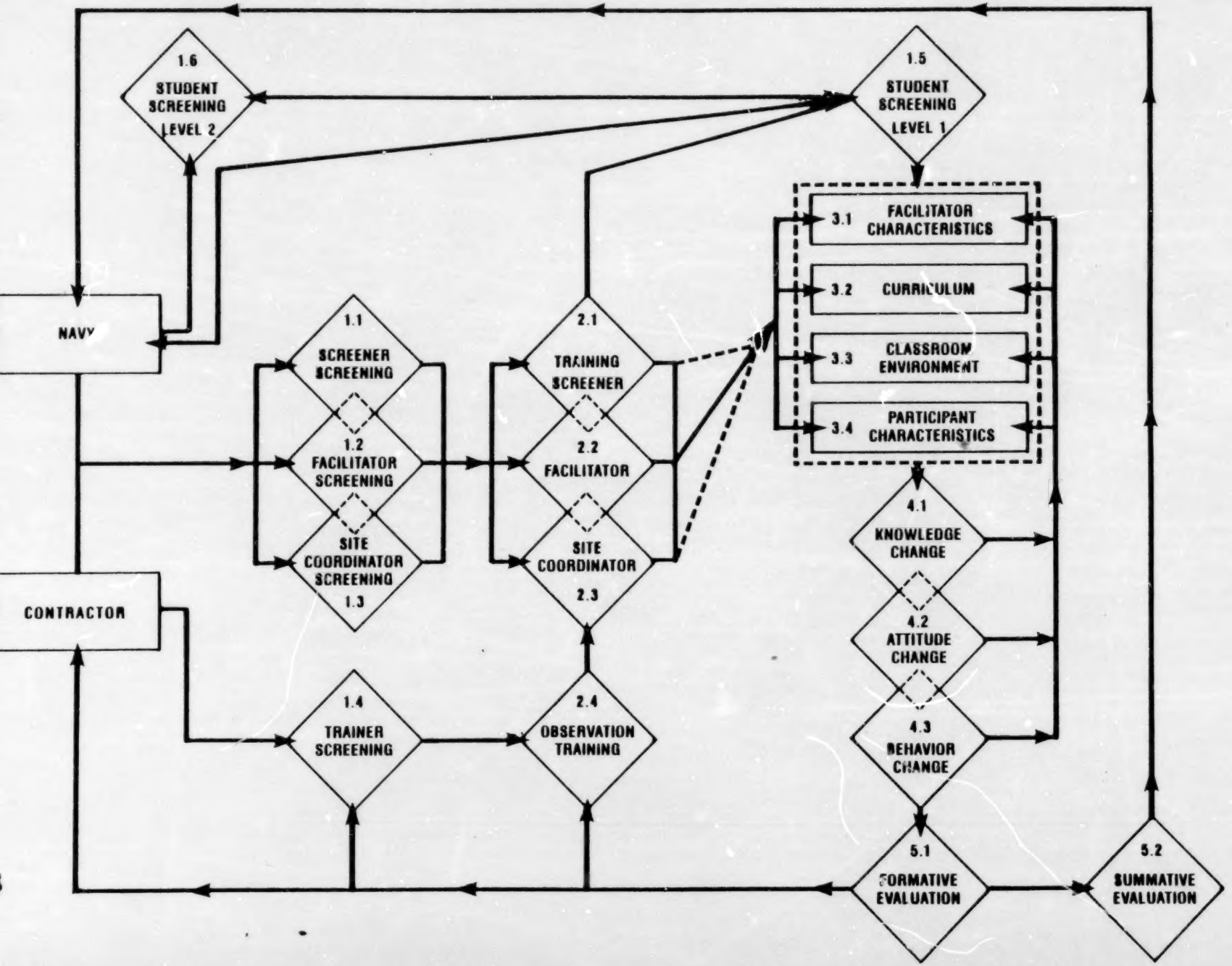
MODEL FOR EVALUATION



Navy Substance Abuse Prevention Program:

Research and Evaluation

The implicit goal of research and evaluation efforts entails generation and dissemination of continuous feedback regarding the strength and integrity of each program element, thus providing an empirically valid data source to complement strategic change, administrative decision making, problem solving, and ultimately, program evolution. The process oriented model for evaluation (see attached Figure) includes three **formative** (namely: personnel selection, personnel training, and process) and two **summative** (namely: participant change, and system impact) components which represent fourteen interrelated tasks.

Inclusion of the formative components appears to be relatively novel within existing alcohol and drug prevention/intervention evaluation efforts. These three domains will enhance the probability of identifying "types" of curricular elements, "types" of learning environments, and "types" of participants that will contribute to successful intervention. Formative research and evaluation efforts will illuminate (and eventually be utilized to reduce and/or eliminate contamination) mediators of the knowledge, attitude, and behavioral change that the program is designed to accomplish. By examining process, the ability to determine the relative contribution of each component to the complete intervention package will be maximized. Continuous monitoring and refinement of each

intervention component should, ultimately, result in a "package" that is the best possible for the Navy population. The program will be flexible to the extent that it is effective.

The Summative evaluation goals represent "anchors" for all formative components; i.e., Participant Change and System Impact data will be utilized to dismantle the Formative components, separate effective from feckless pieces of the "package", strengthen efficacious content while simultaneously altering or replacing ineffective content, and finally, to demonstrate positive outcome to Navy, Civilian, and Scientific communities. Instrumentation for the Participant Change component includes assessment of knowledge, attitude, and behavior. System Impact is restricted to the Navy specified goals and objectives which focus upon positive change in terms of non-judicial punishment for alcohol and drug related incidents, work related accidents, sick days, hospital days, absenteeism, rate/rank reductions, and negative confrontation with either Naval or Civilian communities. Both Summative components are designed to assess impact, as well as providing a gauge for all Formative efforts.

Collectively, Formative and summative Components combine to form a solid foundation for a systematic approach to research and evaluation which should effectively reduce many of the uncontrolled threats to validity that are quite obvious in any human service intervention. The vast majority of programs that resemble

NADSAP in terms of delivery have, more often than not, been plagued by a host of intervening variables which render interpretation of treatment effectiveness impossible. Aside from obvious differences among program participants (e.g., demographic, social, psychological, physiological, and cognitive), human service interventions introduce intra- and inter-treatment variability as well. Potential threats to validity and integrity of human service interventions are overwhelming; but, standardization within and across intervention agents, measures, instructional techniques, and strategies can effectively reduce invalid interpretation and inference.

Essential to the evolution of standardized intervention is a thorough understanding of all treatment components, their relative contribution to the desired outcome (in terms of the ratio of effort to quantity and quality of expected outcome), and reduction and/or elimination of extraneous sources of variability. Careful research design and thoughtful conceptual analysis are prerequisites for identification and comprehension of intervening variables. When factors that mediate treatment (both intra- and extra-treatment) are clearly understood, intervention effects can be traced throughout a network of outcome measures. Potential sources of variability inherent to The University of Arizona NADSAP efforts are restricted to the three Formative components. The specific

evaluation tasks which constitute these general components are discussed in detail below.

PERSONNEL SELECTION

(1.1 through 1.6)

Research and evaluation efforts associated with Personnel Selection are restricted to The University of Arizona employees: Trainers, Site Coordinators (Site level program managers), Screeners (Participant triage agents), and facilitators (Intervention delivery agents). Eventually, collection of continuous data from all program personnel should result in a systematic reduction in uncontrolled sources of variability (thus eliminating many of the threats to internal and external validity) by ensuring a high congruence between the program as intended and the program as delivered (integrity). Reduction in variability associated with each of the Personnel Selection components will occur as follows.

1.1 - Screener Screening

The primary function of Site Screeners is preintervention participant evaluation and triage. Hence, Screeners are expected (by way of a semistructured interview) to refer potential NADSAP participants to the most appropriate source of help; be it education (NADSAP), or counseling (CAAC), while simultaneously providing a positive, motivating introduction to the helping network.

Since the vast majority of information which is utilized for assessment and subsequent referral involves self-report, the Screener position requires excellent communication skills (both verbal and nonverbal), as well as observation/inference skills to distinguish accurate or inaccurate behavioral accounts. Screeners are expected to track process throughout the interview, to be nonjudgmental during the referral process, and to accurately articulate information garnered from a "record review" and the interview throughout the entire screening process.

Site Screeners are selected by Site Coordinators on the basis of their skills in observation, tracking, communication, and decision making. Eventually, Screener screening will be contingent upon findings related to the Participant Change component: Referral accuracy will be estimated from the magnitude of Participant change, and a predictive model constructed from demographic, psychological, and skill characteristics of effective and ineffective on-line screeners will be constructed to compliment the existing Screener selection process.

1.2 - Facilitator Screening

Currently, site coordinators screen prospective facilitators prior to The university of Arizona Training. This screening process has consisted predominately of structured interviews which were developed at The University of Arizona. Although some improvement (as reflected by an increase in percentage pass rates in the

Facilitator training component) has been observed since implementation of this process. Variation across sites is indicative that the observed benefits are not consistent. The most obvious explanation for this inconsistency is that Site Coordinators represent a heterogeneous group that enter into the process with a variety of subjective impressions concerning the distinction between good facilitator prospects and inadequate ones. The facilitator screening package (a compilation of interview questions, paper and pencil instruments, and an "impressions inventory" for the Site Coordinator was created to reduce variability among training groups. Unfortunately, the degree of implementation during the facilitator screening process varies considerably across Site Coordinators. More often than not, pass rates (during the facilitator training) are reflected in the extent that the facilitator screening package was employed during the screening process. Data indicate that the facilitator screening package can effectively reduce interindividual variability among perspective training groups. When the package is used consistently by all Site Coordinators, facilitator variability within and across all NADSAP sites will be minimized, thus enhancing the quality of The University of Arizona facilitator training. By allowing only individuals with observable skills into the training, training groups will decrease in size and pretraining skill level will be amenable to more advanced training techniques.

Initial efforts to streamline the facilitator screening package involved an extensive investigation of the predictive relationship between facilitator responses to Rokeach and Firo-B scales and their subsequent scores in The University of Arizona Facilitator Training. Although the fourteen subscales of these instruments accounted for statistically significant portions of variance in trainer assessments of skill levels, the practical significance of this endeavor was mediocre at best. Fortunately, these findings were interpreted as "promising", and use of the Rokeach and Firo-B scales was continued.

Results from the initial effort forced recognition that a major problem associated with predicting trainer assessments of skill level from facilitator responses to the two instruments is related to the error increase due to an interaction between unacceptable intertrainer agreement on skill level and measurement error inherent to the self-report information. Obviously, error originating from two (both in this instance) sources eliminates the possibility of accurately partitioning the effects of each.

Accordingly, a series of psychometric analyses were initiated to examine the construct validity of the Rokeach and Firo-B scales. A new data set was obtained, and factor analytic strategies were employed to examine the factorial validity of each instrument. The number of factors to be retained was forced to reflect the number of constructs purportedly measured by each instrument: eight for the Rokeach, and six for the Firo-B. Results from this

analysis (a principle components extraction technique, followed by orthogonal rotation) indicated that neither of the instruments yielded an interpretable factor structure. (If eigenvalues greater than one had been the criterion for factor retention, the Rokeach analysis would have resulted in sixteen factors, the Firo-B analysis resulted in thirteen factors.) Evidently, the Rokeach and Firo-B instruments fail to possess the properties which they have been attributed in the related literature.

Failure to establish acceptable levels of construct validity within either of the predictive measures constituted the rationale for dismantling each scale, item by item, in an attempt to construct a new measure to successfully predict trainer assessments of facilitation skill level. The lack of factor structure that was observed for both instruments provided convincing evidence that neither was reliable (and hence, by definition valid) for predicting facilitator success in the training.

Individual items from both scales were entered separately into a regression analysis where trainer assessments of the eight facilitation skills represented the dependent measure. The initial "sifting" process identified twelve items from the Rokeach, and twenty-two from the Firo-B that combined to explain between sixty-four and ninety-six percent of the variation in trainer evaluations of skill level.

To further refine the predictive accuracy of these items, another analysis was computed to eliminate overlap between all thirty-four items. This procedure eliminated another ten items (two from the Rokeach, and eight from the Firo-B). The remaining twenty-four items shared between seventy-eight and ninety-nine percent of the variance in the dependent measures. In essence, the sifting process identified twenty-four items from an original pool of ninety-four, that contribute significant amounts of predictive information to differentiate poor from good facilitation skills as perceived by The University of Arizona Trainers. This process is currently in a replication phase.

1.3 - Site Coordinator Screening

The Site Coordinator (site Level Program Manager) functions as middle-management; and hence, is responsible for ensuring that the program as conceived is congruent with the intervention that Navy participants receive. Responsibilities include Personnel Selection (office staff, Site Screeners, and Facilitators), facilitator and class scheduling, and liaison between local Navy personnel, local contract employees, and the central office in Tucson.

Site Coordinators are selected by The University of Arizona management in accordance with their performance during a lengthy, semistructured interview (not drastically different from the interview that Site Coordinators use to select potential facilitators for the Training Component).

Skills associated with the Site Coordinator position include: Communication, Problem Solving, Decision Making, and Management.

In an attempt to build a statistical model to discriminate "effective" from "ineffective" Site Coordinators, all of the on-line Site Coordinators responded to the Personal Orientation Inventory and the Strong-Campbell State-Trait Scale. To validate the utility of these instruments, the principal investigator, operations coordinator, and three trainers ranked each respondent according to their perceptions of performance in the role of Site Coordinator. Responses to the two instruments were utilized to predict rank. Similar to our experience with the facilitator screening package, results from this effort were unsuccessful. Future efforts will employ different measures to predict Site Coordinator performance.

1.4 - Trainer Screening

The screening process for trainers consists of a comprehensive interview with each program component (namely: Training, Operations, Curriculum, and Evaluation). The primary function of this interview process is to screen out applicants who do not have the skills in process training which are deemed essential to The University of Arizona philosophy. Applicants who successfully complete the interview process are hired (on a

probationary status) and given the opportunity to demonstrate their skills during two separate trainings with two different on-line trainers. This provides trainer applicants an opportunity to demonstrate their skills, and the on-the-job performance evaluation conducted by the co-trainers is the ultimate test to determine whether or not these applicants will be selected as active trainers.

1.5 - Student Screening (Level 1)

The goal of the screening process is twofold: the referral of Naval Personnel to the most appropriate source of help and the positive, motivating introduction of the individual into the helping network. In The University of Arizona program, this goal is achieved through the administrative screening process.

The screening process involves a meeting between the Site Screener (cf., 1.3) and the potential NADSAP participant. During this meeting, the Navy member completes the NADIS intake form (Navy Alcohol and Drug Information System) which elicits information regarding demographic and service background, pre- and post-service legal history, and present and past drug and alcohol use. The Screener and Navy member review health and service records to identify and discuss relevant problems. The Screener's analysis of this information is then utilized to refer the Navy member to the most appropriate source of intervention.

The primary goal of evaluation and research into this particular component is to ensure that all referral decisions are accurate, and hence, consistent across all screeners, i.e., that any given set of information will be interpreted similarily by the Screener, and subsequent referral decisions will reflect this interpretation by demonstrating that any given individual will be referred to the same level of intervention regardless of who makes the referral. To this end, the research and evaluation component has created, and distributed a "pilot action matrix" to facilitate the screening process. This instrument focuses upon factors which are related to past and present alcohol and drug use, as well as the magnitude and direction of change evident in each of the indicators. The primary intent for this particular instrument is to reduce variability between screener's assessments and subsequent referral. By assigning only those who are likely to benefit from the NADSAP experience into the course, personal success and program efficacy will increase substantially.

1.6 - Student Screening (Level 2)

The University of Arizona and Navy target individuals who are potentially amenable to an educational intervention only. Persons perceived as possessing drug and alcohol problems which extend beyond an educational intervention are sent, via the Level 1 screening process (1.5) to Level 2 screening. This process is performed by Naval Personnel,

and any treatment beyond the educational intervention provided by The University of Arizona is also a Navy function. Research and evaluation pertaining to Student Screening - Level 2 is not addressed by the current tasking order. Student Screening beyond Level 1 was incorporated into the evaluation model for the purpose of acknowledging the Navy's continuum of care.

PERSONNEL TRAINING

(2.1 through 2.4)

Personnel Training is provided by The University of Arizona for Trainers, Site Coordinators, Screeners, and Facilitators. Trainers receive instruction in facilitation skills training and observational techniques associated with the skills which are strengthened during the facilitator training. Site Coordinators, Screeners, and Facilitators receive training which is tailored to their position. Evaluation and research concerning the training components focus upon enhancing inter-trainer agreement on facilitation skill level, establishing the generalizability of skills observed in the facilitator training to the classroom environment, and determining the effectiveness of each training component to overall program efficacy. A brief description of research and evaluation efforts associated with each of the training components follows.

2.1 - Screener Training

All University of Arizonans Screeners are required to attend the twenty-hour Facilitator training which emphasizes eight facilitation skills: Tracking Content and Process, Empathy, Genuineness, Respect, Self-Disclosure, Openness to Feedback, Giving Objective Feedback, and Group Management. Since the primary function of the screeners is participant assessment and triage, skills which are deemed important for effective screening include communication (both verbal and non-verbal), observation/inference, and the ability to articulate large quantities of information in order to make the most appropriate referral decisions.

Research and evaluation efforts related to this component focus primarily upon standardizing the referral process (by reducing subjective interpretation). In essence, the screener must choose one of two alternatives for each potential NADSAP participant: NADSAP or CAAC (Level 2 screening). The "action matrix" discussed above, when used appropriately, virtually eliminates most subjective interpretation from the process, however, screeners do have the option of selecting the opposite choice provided that they provide in writing the rationale for deviation from the matrix. To date, research and evaluation regarding the Screener training component has been limited to matching screener decisions to "post-course" facilitator perceptions of "referral appropriateness". If facilitators perceive the referral as appropriate following their thirty-six hours of interaction

with the individual, the participant is returned to their command following NADSAP. Should the facilitator feel that the participant needs additional help following participation in NADSAP, she/he can refer them to the CAAC for further screening and/or additional treatment.

The ultimate goal of the administrative screening procedure is to make appropriate referrals during the initial intake interview. Future efforts, following the establishment of "Participant Characteristics" (cf., 3.4) which are correlated with positive change attributable to participation in NADSAP, involve incorporating these characteristics into the Screening process. Site Screeners will be trained to utilize all relevant information prior to the referral decision. Screening effectiveness will be established by calculating "hit rates" based upon all dependent measures included in the "Participant Change" component discussed below.

2.2 - Facilitator Training

The University of Arizona Trainers who successfully complete the Trainer Screening (1.4) and Observation Training (2.4) meet prospective facilitators who have successfully completed the Facilitator screening Process (1.2) during The University of Arizona Facilitator Training (2.2). This intensive twenty-hour experience is designed to develop and refine the skills deemed necessary for effective facilitation (namely: Tracking Content and

Process, Respect, Genuineness, Empathy, Openness to Feedback, Giving Objective Feedback, Group Management, and Self-Disclosure). During the Training sessions, prospective facilitators are given numerous opportunities to demonstrate and refine their skill level. Trainers observe process, evaluate individual skill level, model skills, and provide timely feedback to shape skills into acceptable levels.

Evaluation of the Facilitator Training involves pre- and post-training assessment of facilitator perceptions regarding the importance of various characteristics and skills which are conducive to NADSAP participant knowledge, attitude, and behavioral change. The self-report instrument is designed to elicit perceptions regarding the importance of twenty-two facilitator skills and characteristics in relation to effective facilitation, as well as self-assessment on each characteristic. Ratings of the importance of each item are construed as a measure of Ideal Facilitation correlates, and self-assessments are conceptualized as Real Facilitation Ability. The discrepancy between Real and Ideal perceptions is a projective measure of Self-Efficacy specific to each training participant. Hence, Training effectiveness is assessed from an Ideal perspective (i.e., How does participation in the Facilitator Training affect self-assessed facilitation ability?), and a Self-Efficacy perspective (i.e., How does participation in the

Facilitator Training affect perceptions regarding the belief that one is an effective facilitator?).

Since all components of the NADSAP evaluation model are inextricably interdependent, data emerging from the Facilitator Training module can eventually be employed to evaluate the effectiveness of each University of Arizona Trainer and each Facilitator Training according to the three domains described above. Upon completion of the Participant Change (4.1 through 4.3) components, facilitator effectiveness can be estimated from participant knowledge, attitude, and behavioral change, and subsequently matched to the facilitator's trainer(s). Estimates of trainer effectiveness will be inferred from facilitator effectiveness in the classroom.

2.3 - Site Coordinator Training

The Site Coordinator (Site Level manager) represents the primary link between the Navy, The University of Arizona, and the NADSAP employees at the Site level. Major responsibilities include scheduling classes and facilitators, managing the budget, screening facilitators and screeners, and organizing and managing monthly facilitator meetings.

Site Coordinator Training consists of three major components: An orientation at The University of Arizona following hire, periodical management assist visits, and an Annual Management conference. The orientation process lasts approximately one week and consists of an intense

overview of each program element. During orientation, new Site Coordinators meet with representatives from each program component (namely: Operations, Curriculum, Training, and Evaluation), and discuss issues, policy, and management strategies. The Annual Management conference consists of five days in Tucson, and two days in San Diego. During the first segment, all Site Coordinators meet to discuss issues, exchange ideas and management strategies, and participate in skills training in each area relevant to their position. The second segment merges all contract employees (Site Coordinators and Tucson staff) with Navy personnel from each Site. During this segment, military issues with contractors, and contractor issues with the military are discussed.

2.4 - Observation Training

The University of Arizona Trainers have the final input regarding who is, and who is not hired from the prospective facilitator pool. Hence, the importance of their skill evaluation ability cannot be overemphasized. Since the inception of this program, several observational rating forms have been developed and field tested to ensure that similar facilitation skill levels will receive identical assessments, regardless of which trainer evaluates them. Currently, an eight-item form is being used in the field. The eight behavior skills (namely: Tracking Content and Process, Empathy, Respect, Self-

Disclosure, Openness to Feedback, Giving Objective Feedback, and Group Management) are evaluated separately for each of the facilitator trainees, and individual scores from these assessments determine who is able to continue the hiring process as a University of Arizona Facilitator.

Initial efforts involved extracting demographic information from the completed employment forms retained in the Tucson Office. by combining this information with the evaluation scores assigned by The University of Arizona Trainers, we were able to provide feedback to the Trainers regarding the relationship between their skill assessments and the specified characteristics of age and education among the Facilitator pool. Although this information was interesting, as well as informative, it did not address agreement issues associated with the evaluation process, nor did it reflect the entire training population (files retained in the tucson office pertain to employees only. The sample for this investigation consisted of facilitators who had previously passed the Training which necessarily meant that they had received scores in excess of three across all eight skills).

In order to better assess intertrainer agreement, independent trainer ratings were mandated (often times, two trainers conduct the facilitator training) to pave the way for more valid and comprehensive interpretations concerning the behavioral ratings. A brief questionnaire designed to elicit demographic information from all members of the training groups is also distributed during the facilitator

trainings. The instrument contains questions regarding respondents gender, age, ethnicity, marital status, NADSAP background, and self-reported experience with alcohol and drugs.

By administering the questionnaire at the beginning of the training experience, demographic information is available on every person in the training, regardless of whether or not the training participant received passing scores from the trainers.

In a related effort, an analogue study was created to obtain independent trainer ratings of a video-taped segment of an actual training. Training tapes were edited, and a new tape depicting a single facilitator in a role play of the Group Management exercise was developed. the final version was approximately seven minutes in length.

Each of The University of Arizona on-line Trainers was asked to view the tape, and to assign behavioral assessments to each of the eight facilitation skills presented on the eight item feedback form. Completion of this task represented the first time that each of the on-line Trainers had independently rated the same target person. From these data, estimates of inter-trainer agreement were established by computing multiple correlation coefficients for each trainer with all others for each of the facilitation skill assessments. These results were not particularly impressive; R ranged from a low of .396 to a high of .727. Apparently, the ambiguity

inherent to each of the eight facilitation skill categories induced the Trainers to define, and subsequently rate the skills according to their own priorities conception of the specific behaviors that represent each of the eight skills.

In an attempt to advance our understanding of the process underlying the evaluation technique, the original score matrix was inverted, and Trainers were clustered according to their skill assessment (Q-factor analysis). This procedure yielded three independent factors (or clusters) of trainers. Intertrainer agreement within factors ranged from R=.739 to .900 for factor one Trainers, and R=.704 to .808 for factor two Trainers. A single Trainer constituted factor three; within factor agreement was neither computable nor interpretable for factor three.

Although intertrainer agreement within factors was acceptable, interfactor comparisons were generally weak. Multiple correlation coefficients calculated across trainer clusters (or factors) ranged from R=.432 to .727. Since our ability to streamline an effective paper and pencil screening tool for facilitators (1.2) is inherently related to the extent that we can establish reliability within the criterion measure (Viz., Trainer ratings of facilitation skill level), the results of the analogue study are a step toward this end.

Future efforts involve continued collection of information regarding Facilitator Training participant demographic characteristics from every training participant, regardless of their performance. This

information, in conjunction with the independent trainer evaluations of participant performance will yield sufficient data to provide trainers with practical feedback concerning potential biases which are integrated into their behavioral assessment. This feedback, combined with independent Trainer ratings of the edited training tapes (collected in a controlled environment) can then be implemented to enhance intertrainer reliability. Immediate and persistent feedback should ultimately result in a reduction of intertrainer variability across the behavioral ratings. Furthermore, the facilitator demographic information will be employed to identify facilitator characteristics associated with (and predictive of) success in the Facilitator Training.

As noted earlier, the Personnel Training component of the NADSAP evaluation model focuses primarily on reducing and/or eliminating uncontrolled variables inherent to the overall intervention effort. This brief description of the Personnel Training evaluation tasks has highlighted several potential sources of variability, identified possible strategies to reduce this variability, and presented previous and proposed methods of decreasing these potential threats to the integrity of the entire intervention effort. No doubt, much more effort is required to achieve this goal. The Model for Evaluation of NADSAP provides insight for increased understanding by providing direction for future efforts.

PROCESS

(3.1 through 3.4)

While it is recognized that standardization is necessary for evaluation of human service intervention programs, it is also evident that standardization is not sufficient for program success. Hence, the rationale for a process component within the evaluation effort. Even though evaluation efforts directed toward Personnel Selection and Personnel Training are reducing variability among numerous factors, not all mediating variables can be eliminated. A thorough understanding of the intervention process can enhance the effectiveness of NADSAP. As shown in the Evaluation Model, four distinct factors with mediational potential have been incorporated into the Process component. Obviously, Facilitator Characteristics, Curriculum, Classroom Environment, and Participant Characteristics are Classroom Environment, and Participant Characteristics are viable sources of program mediation.

The primary impetus of the Process evaluation component involves examination of mediating factors within the intervention itself. Upon establishing the effects of each factor, as well as the interaction between these factors, this knowledge can be employed to enhance intervention outcome. For example, in a previous investigation, age of participant interacted with facilitator gender to affect participant course and facilitator evaluations. Younger participants possessed

more positive views of courses facilitated by female facilitators. Conversely, as participant age increased, evaluations of female facilitated NADSAP classes decreased. Should this phenomena emerge repeatedly in future investigations, it would behoove program administrators to mandate female facilitators for classes composed of young Participants, and male facilitators for classes that are composed of older (30+) participants. Ideally, a thorough understanding of all variables that mediate intervention effectiveness would guide manipulation of these factors to maximize desired change in the outcome measures. The four categories included in the Process component of evaluation are: Facilitator Characteristics, Curriculum, Classroom Environment, and Participant Characteristics.

3.1 - Facilitator Characteristics

Aside from the Trainer evaluations of skill level during the Facilitator Training, the only feedback that facilitators receive is provided by the NADSAP participants following the course. Participant perceptions of facilitator and course effectiveness are important to evaluation because they are indicative of facilitator competency as perceived by the target population. Facilitator Characteristics (demographic, cognitive, psychological, and physiological) are probable mediators of participant perceptions of competency. Examination of Facilitator Characteristics, in conjunction with Participant Change, will strengthen the Facilitator

Screening (1.2) and Facilitator Training (2.2) components of the evaluation effort. Furthermore, insights for molding the NADSAP efforts around the intervention population to maximize knowledge, attitude, and behavioral change will evolve through investigation of process.

Measurement of knowledge, attitude, and behavior, both pre- and post-NADSAP, reflect course effectiveness; the NADSAP facilitator and course evaluations reflect participant perceptions of course effectiveness. The difference between participant change and perceptions of usefulness is of interest because Facilitator Characteristics potentially mediate both; i.e., some Facilitator Characteristics mediate actual change, and others mediate perceived change.

3.2 - Curriculum

The curriculum, or plan of presentation, is composed of several experiential and instructional components, each accompanied by specific goals and objectives. further, each of the modules can be presented in a variety of sequences. Aside from examining the relative effectiveness of each module, the ordering and the sequencing of presentation are likely mediators of Participant Change. Comprehensive experimental designs will be developed to examine the effectiveness of each curricular component, as well as to establish the most effective order and sequence of presentation. If some modules are found to be

nonefficacious according to the desired knowledge, attitude, and behavior change, they will either be removed or strengthened to contribute to the overall intervention. Likewise, by manipulating order and sequence of presentation, we can determine which combination yields maximum change in the outcome measures.

3.3 - Classroom Environment

The educational literature is literally bloated with studies which examine the effects of environmental contingencies and the learning process. Educators and psychologists have documented the impact of a host of environmental variables on subsequent learning outcomes. Factors such as class size, day versus night scheduling, location, length of sessions, and class "character" are likely mediators of the intervention process. The Classroom Environment component of the evaluation model was included to examine these variables. Similar to the proposed methodologies described above, experimental designs can be utilized to investigate the effect of variations in learning environments. This information, will be utilized to maximize intervention effectiveness.

3.4 - Participant Characteristics

Although Participant Characteristics such as age, rank, educational level, length of time in the service, gender, family background, pay rate, previous drug and alcohol experience, "quality of life", and ethnicity are

not likely to be affected by participation in NADSAP, individual differences and intervention outcome can be combined to maximize participant change. By examining Participant Characteristics and knowledge, attitude, and behavior change following NADSAP, the mediational effects of intra- and inter-individual differences can be harnessed and controlled to maximize intervention effectiveness. Previous studies which have focused upon participant characteristics and participant perceptions of "course usefulness" have demonstrated that an interaction does exist. Our goals and objectives related to this component are inherently related to the generalizability of these interactions to actual change in knowledge, attitude, and behavior.

Ideally, repeated examination of the relationship between process variables inherent to the NADSAP intervention should provide a wealth of information pertaining to Facilitator Characteristics, Curriculum Modules, Classroom Environments, and Participant Characteristics which are conducive to successful intervention. Moreover, insight concerning the interaction between all process variables can be useful in "molding" the entire intervention package to the target population to ensure maximum change in outcome.

PARTICIPANT CHANGE

(4.1 through 4.3)

The primary goal of The University of Arizona NADSAP intervention is to change drug and alcohol related behavior in the target population. While knowledge is necessary for behavioral change, it alone is not sufficient. When the Process components (3.1 through 3.4) are effectively manipulated to ensure intervention effectiveness, participant attitudes should change also. The Participant Change components focus upon establishing the extent to which participant knowledge, attitude, and behavior are altered as a direct result of participation in NADSAP. Attitudes of interest include attitudes toward alcohol and drug use, attitudes toward work, and most importantly, attitudes toward self. The University of Arizona philosophy is geared toward increasing self-awareness and responsibility toward self and others. The Participant Change component of the evaluation model was included to investigate the extent that the intervention accomplishes these goals.

4.1 - Knowledge Change

Knowledge is assessed with the forty-item questionnaire developed by Malfetti (1971). Information pertaining to scale construction, validation and related psychometric properties, and norms can be obtained from The University of Arizona.

4.2 - Attitude Change

The instrument for assessing attitude change consists of a composite of previously developed scales which have demonstrated acceptable reliability and validity, as well as a documented relationship to either alcohol and drug use, or alcohol and drug use/abuse prevention/intervention. Specifically, modifications of the Rosenbaum (1980) Self-Control Scale, Reynold's (1982) version of the Marlow-Crowne (1960) Social Desirability Scale, Zuckerman's (1979) Sensation Seeking scale (subscales include Disinhibition, Susceptibility to Boredom, Novel Experience Seeking, and Thrill and Adventure Seeking), the Rathus (1973) Assertiveness Inventory, Rotter's (1966) Locus of control measure, the CES-D Depression scale (Radloff, 1977), Adam's measure of Ego-Identity (1983), and Rosenberg's (1965) Self-Esteem Scale.

4.3 - Behavior Change

Actual behavioral measures are extracted from the Navy Alcohol and Drug Information System (NADIS) and the participant's medical and personnel records during the screening (1.5). These data include BAC at the time of arrest (if applicable), pre-service arrests, convictions and waivers, court martials, reductions in pay, rate, and rank, alcohol and drug related incidents (traffic and otherwise), as well as several self-report measures aimed at eliciting extent of alcohol and drug use.

In addition, two measures of drinking quantity and frequency are included to examine intervention effectiveness as mediated by the extent of drinking problems. These measures are the Alcoholism Indicator Scale (Malfetti & Simon, 1974) and the MAST.

5.1 - Formative Evaluation

Formative evaluation represents findings from each of the components which constitute the Personnel Selection, Personnel Training, and Process evaluation modules. Information obtained from tasks 1.1 through and including 3.4 will be "fed back" to all other components.

5.2 - Summative Evaluation

Summative evaluation represents findings from each of the components which constitute the Participant Change evaluation module. Information obtained from tasks 4.1 through and including 4.3 will be "fed back" to the Navy, Civilian, and Scientific communities.

SUMMATIVE STUDIES-in progress

FCP/NADSAP-DUI/DWI/OUI: two year longitudinal study currently implemented at:
San Diego
Bremerton

Data collection: record reviews and questionnaires.

Measurement intervals: Pre/Post, 3,6,9,12,18, & 24 month followup.

Sample Size to date: 241.
Anticipated N: 700.

Supervisor Followupl: post test only, currently implemented at:
Great Lakes

Data Collection: questionnaire.

Measurement intervals: 3-month followup.

Sample size to data: 143.
Anticipated N: -ongoing

Supervisor Followup2: pre/post, currently implemented at:
San Diego
Bremerton

Data Collection: questionnaire.

Measurement intervals: Pre-NADSAP, and 3-month followup.

Sample size to date: 46
Anticipated N: 60

Participant Followup: on year, Cross-sectional study currently implemented at:
San Diego
Bremerton
Pearl Harbor
Great Lakes
Jacksonville
Yokosuka

Data collection: NADIS, NADSAP Client intake form, & Questionnaire.

Measurement intervals: NADIS & intake data-pre NADSAP; questionnaires-3, 6, 9, & 12 months following class completion.

Sample size to date: 119
Anticipated N: 1800

Student Knowledge Change: Pre and Post course implemented at:
Various Sites (n=16)

Data Collection: questionnaire.

Measurement interval: Pre and Post NADSAP.

Sample size to date: 3126.
Anticipated N: ongoing.